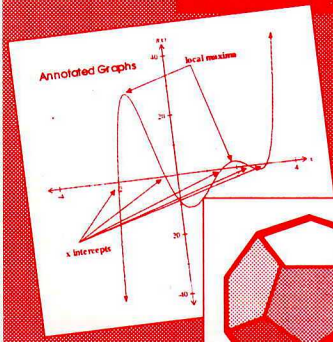
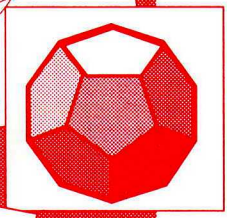
RM User

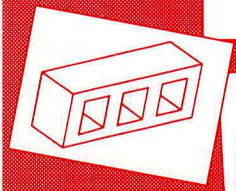
Volume 12:5
March 1998

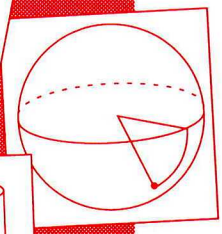
FX Draw

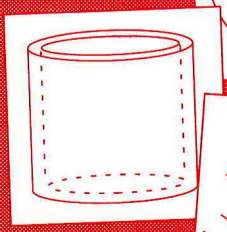
Available for IBM (Windows 3.1 or later) Requires a Windows word processor, eg MS Word, Windows Write etc.

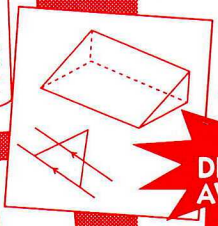


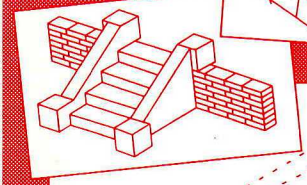


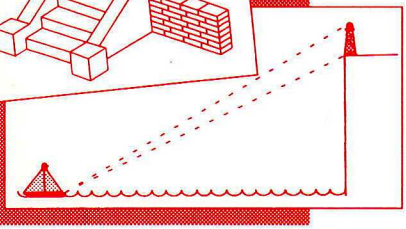












FX Draw is a drawing package designed for mathematics. You can draw almost any required mathematical diagram with a minimum amount of input from yourself.

There are tools for drawing angles, graphs, normal distribution curves, Venn diagrams, right-angled triangles and a host more. FX Draw is an OLE object, and fits seamlessly into any Windows word processor, such as Microsoft Word. Your diagrams will be inserted into your document and appear on your screen as they will appear when printed. The diagrams can be moved, resized and edited from within your document.

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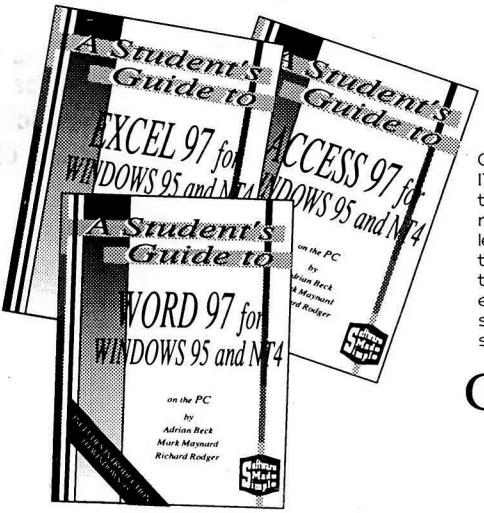
Software Made Simple



Printed Guides

Our booklets are written and produced by IT teachers who themselves understand the need to have quality classroom materials. They encourage students to learn independently. But they also recognise that teachers are busy, need documentation to support their classes, and cannot be expected to update this themselves as new software versions and changes to operating systems occur.

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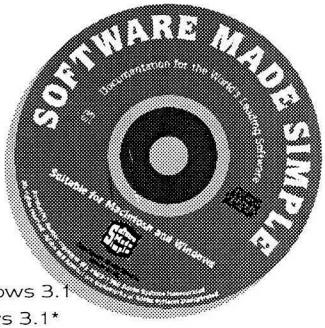

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Deadlines for the next issues

RM User 12.6 ..... 20 June1998

RM User 13.1 ..... 20 October 1998

The date shown above is the ***latest*** date for copy for the magazine. You will normally receive the magazine about 2-3 weeks after the date shown.

Missing a Magazine?

Back issues of the magazine are available from the editor - please contact me for more details. I am delighted to announce that through the kind assistance of Tim Clark, we now have the URL www.rmug.org.uk. Diana Rolf has been helping to re-organise the site and I am sure she will be grateful for any feedback. There is a list of phone numbers of the suppliers who have been reviewed in the past, contents pages and a few articles.

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Advertising in the Magazine

Full and half page advertisements can be placed in the magazine and details can be obtained from the Advertising Manager. We also take classified ads and members may place free ads for surplus equipment in MicroMart.

Rates

Back Cover **£60** Inside Cover **£50** Full Page **£30** Half Page **£20**

These rates assume black-on-white, camera ready copy. Please avoid dot-matrix output. Typesetting is charged at cost and is additional to the above rates. Please make cheques payable to *RM User Group*

NEWS AND EDITORIAL

Important Changes

At the last General Meeting it was decided that since we have not managed to get the membership numbers back up to where they should be, we will have to drop from six to three issues of the magazine per year, possibly with an interim newsletter once a term, and to put the membership subscription up to £25. If any of you can come up with any ways to bring in more members, we can reverse these changes. RM have made significant efforts, helping with a display board at the roadshows, plugging the Group in most of their publications and linking from the front page of the corporate website. In spite of this, I still get messages from people who say "What a wonderful service the Group offer - why haven't we heard of it before?" I hope to make the three issues bigger than the previous ones - but I do depend on YOU for input! I would also like to increase the amount of class-based resources. I think that RM USER was invaluable when we had less stable networking systems. Now that the pressure is not the same, and we don't need to run articles which would make sure that your network survived, we can replace them with articles about good practice. I did think it would be nice to do lesson plans in a standard format and put them in the middle on thicker stock so that they could be easily removed and collated in a folder. Do any of you have such a format that you use and would share with the Group? Even if you cannot send an article but you have an opinion on these issues or see a need for a specific type of content, please get in touch with me or any member of the committee.

Prod, prod

I believe that a very important function of the User Group is to give focused feedback to RM. I also believe that a crucial part of my role is to speak out about what I think RM should be doing in terms of services and support. I have maintained for ages now that they should pay us to have a modem in every server. Calls to technical support would then be a lot shorter (and often replaced with emails) and would be in the form of "Please check the set-up of my second laser printer." Technical support would then dial into the server and set it up directly. Thousands of (expensive!) man-hours at both ends of the phone would be saved as the need to check all other communication misunderstanding possibilities was removed. I have also suggested that all the Q & A sessions at the INSITE shows and the helpful articles in the support bulletins be stored and made available on disk and on the website for us to trawl through when we needed to. Using grep or wgrep or whatever search engine you prefer, you could find out quickly whether someone else has had the same problem and how they got around it. I was very interested to see that Cisco (who partnered RM in sponsoring a website competition last year) won an award themselves for presenting just such a helpful search system at www.cisco.com. It was also stated that they had saved $12,000,000 per month by implementing this system!!!

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Dreamtime

I am currently using a Psion 5 every day. It has some very nice improvements over the Psion 3 - but (and you knew there'd be a 'but') the display is not a patch on the older machine! I also miss the diamond key and the last of the Agenda views, where you could see a list of all your diary entries. I really fancy the latest Sharp Windows CE model. As well as a colour screen, it has an inch-long extra module that plugs into the PCMCIA slot and converts it into a digital camera. On my desk-top I would like a DEC Alpha workstation. This uses a 64-bit RISC chip running at a blistering 500mHz and has a 32 bit emulator which can 'learn' (for example) the NT code and then compile it as a set of RISC instructions. The resulting improvements in performance could mean the end of the hourglass as we know it! Talking of ideal machines, I heard a rumour that the real reason Bill invested in Apple was not to reduce the monopolies slant but because his preferred machine is a PowerMac!

Music while you work

I have just received a really nice program called Dance Ejay. Look out for it - it is a kind of music studio using 'blocks' of sampled music, voices, raps etc. to make a song. The thing that makes it work very well is that the samples are of very high quality and have been very carefully sliced so they fit together perfectly. Check www.ejay.com or phone 01923 495 496 for details.

PLACE YOUR BETTS!

by Diana Rolf

Ever wanted to be a film star? Then get thee to BETT - you'll be treated like royalty. At the gate you get a glossy printed name badge (far cry from the tacky label you have to wear at Parents' Evenings) and as you stroll along acres of red carpet fawning Reps assail you on all sides with free gifts and urgent enquiries about your health, tastes and budget ceiling.

All this will be heady stuff for most teachers, who rarely meet with even basic civility in the course of their job. On the Autodesk stand a young woman interviewed me then announced winningly that she 'must take some snaps'. All the daily indignities of my working life melted away! Not a full photo-shoot, sadly - she was scanning bar-codes into a survey - but it still felt great, and I half expected paperazzi to jump out for the rest of the day.

Other social inadequates will also feel pampered. Shop-lifters can snaffle up brochures without fear of arrest, as most of the stuff on display is free - except, inexplicably, for a pamphlet on Escher, which cost a fiver. The entire population of Cardboard City can cart away enough paper to keep them cosy until the Millennium - with a free 'Telegraph' from the UK Net Year stand to wrap up their chips. Gamblers can have a fling on the many draws and competitions - for some you just fill in a form, for others there's

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just a box for your business card. So, socially inadequate, you don't have one? No problem: on the way in take a tip from the top drop-outs and get 50 printed off for three quid in a machine at one of the main-line stations. Even software pirates can profit if they play their cards right. A dishy young man on the Corel stand told me some amazingly useful things about masking tolerances which the shadowy figure behind me will doubtless try out on all the software he doesn't own before lashing out £89.95 on a copy of PhotoPaint - terrific though it looks. And to judge from snatches of chat, illicit liaisons flourished in the side-aisles, so there really was something for everyone.

Events like this are hard work - you'll need comfortable shoes, a stout heart and three shoulders to carry around all the material you grab as you go round. Teachers will immediately feel at home with the cramped toilet facilities, inadequate cafeterias and shortage of tables. Some brought packed lunches and picnicked on the floor, which was rather matey and gave the whole thing a raffish, Woodstock sort of feel.

The most impressive stand was of course your very own RM - a swirly castle affair, which also looked good from above. It was manned (and womanned) with a fleet of well-informed staff - how on earth can they spare so many for four days? Upstairs UK Net Year had a spectacular show with ranks of work stations and a full programme of on-line seminars, giving teachers new to the Net some introductory training in searches, web design and access to web sites.

Firmly resisting the temptation to slip in among the punters and urge them to log on to some of my own, I moved on to the Special Needs I.T. Village, where some of the big boys like RM and the BBC and a maze of smaller companies had stands. This isn't my subject, but I was interested to see how many small firms had developed software specifically for a single problem, like deafness or dyslexia. They target only a handful of pupils in a school, and with erratic LEA provision and S.N. Co-ordinators so widely scattered they must find it hard to reach their market. Points to BETT for giving them space to shine!

I had hoped to run into Diana at BETT but luckily for her, that was not to be the case. Less fortunate was John Holden. John is a stalwart member of the committee and was at the show every day. We arranged to meet on the Friday and he said he knew a good spot for lunch. That turned out to be the New Covent Garden soup kitchen - and I am quite certain that those words will still bring tears to his eyes.

John wasn't hungry and went to get a table with his cup of coffee. I followed with my cup of spicy Moroccan split-pea and spinach soup. But as I was putting it on the table, my goody bag (including a £5 Escher booklet) fell from my shoulder to my forearm and the resulting physics flipped the steaming contents of the cup into his smartly pin-striped lap! John, you certainly handled the disaster far more calmly than I did - I hope you can forgive me - and accept this public apology!! I think next year we should look for some Dim Sum.

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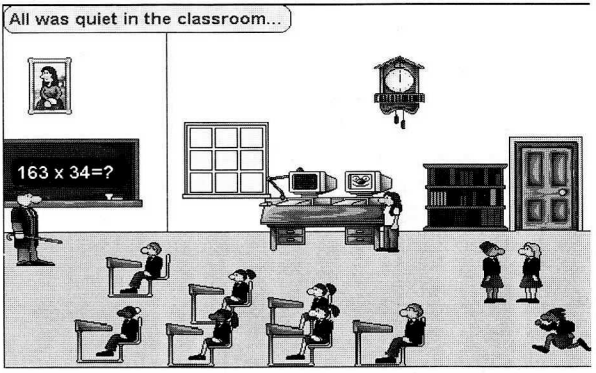
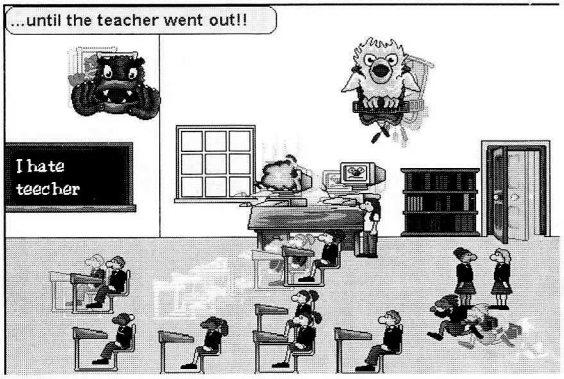
STORY MAKER

by David Palmer

This is an interesting and economical approach to creating multi-media presentations. As with all the Spa products, it is attractive to students and forgiving of mistakes. Students can create stories using a strong library of back-cloths, clipart, sounds and sprites. Once you get started, time fairly flies by as you consider the many possibilities. Will your tale be a story with lots of surprises hidden under the objects - in the style of Arthur's Teacher Troubles? Or will you invest each page with several levels of action so that a conversation can be seen and heard before you turn the page? It would also be possible to create an adventure story (You are at the mouth of a cave, there is a path going East or West . . .) allowing the reader to decide which way they pass through your pages. The possibilities are truly endless and the final product can be distributed with a free Story Player. If you (or your authors) want a wider readership, you might consider sending the file to the Spa website where they have a library. You can also download these files and/or the Story Player program and/or a demo from www.spasoft.co.uk. If your students like a challenge, send in their output to NCET (The National Council for Educational Technology). **Note that** from 1st April 1998 NCET will be known as BECTA (British Educational Communications and Technology Agency). The new URL will be http://www.becta.org.uk/) If you turn to the next page you will find their press release as well as details of another competition.





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COMPETITION CORNER

(1) Here is the press release for the NCET competition:

Start the New Year with a challenge!
Are you making multimedia?
If you are mixing pictures, words and sound on a computer then take part in the BBC Education and NCET National Educational Multimedia Awards. We are looking for entries from pupils and students attending primary and secondary, sixth form and further education colleges in the UK.
Entries will be accepted on Acorn, Macintosh and PC.
Awards will be made for original and creative multimedia compositions including the development of Web pages. These should focus on the curriculum areas taught within your school or college and indicate a link to programmes currently broadcast by the BBC.
The closing date for entries is 30 April 1998.
Schools and colleges can apply for an entry pack by contacting the NEMA Office NCET Milburn Hill Road Science Park Coventry CV4 7JJ
Prizes will include multimedia hardware and software as well as products donated by a wide range of multimedia companies.
This is the fourth year of NEMA and clips of Award winning entries from the first two years of NEMA are available on CD-ROM. You can also see clips from winning entries to NEMA 96.
Entries to previous NEMA awards included:
- original stories in English and French
- local geography
- guide to percussion for music
- packaging for design and technology

(2) Children's International Wildlife Sanctuary **Logo Scholarship**

For some time CIWS has been discussing what should be used for our logo. One of our volunteers had the idea of having the children design a logo for the organization. Through the generosity of this volunteer, CIWS is able to award a Logo Scholarship in the amount of One Thousand US Dollars (US $1000). We have tried to keep the rules as simple as possible. Only one entry per student, under separate cover. Students outside North America may mail their entries in groups.

- CIWS Logo Scholarship is open to School Students in any Country under the age of 19.
- Logo must be an original idea and design by the student.
- Logo should be easily reproducible as a line drawing in black and white as well as full colour.
- Logo should reflect an international theme between wildlife, forests, and children.
- An essay of approximately fifty (50) words or less describing what the Logo stands for.
- There is no entry fee required to submit your design.
- The One Thousand US Dollar CIWS Logo Scholarship will be paid directly to an Accredited College, University, or Trade School in the Student's first year of attendance.
- All entries become the sole and exclusive property of: Children's International Wildlife Sanctuary Inc.
- Please print your name, address, and country on the front or back of your logo design. Please use your imagination. All Entries must be received by May 30, 1998. Entry must be mailed to: Children's International Wildlife Sanctuary Logo Scholarship PO Box 379 Saratoga, NY 12866-0379, USA.

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STAR TREK - "THE LOST EPISODE"

(received as email via Internet - Gisela Legg)

"Mr. LaForge, have you had any success with your attempts at finding a weakness in the Borg? And Mr. Data, have you been able to access their command pathways?"
"Yes, Captain. In fact, we found the answer by searching through our archives on late Twentieth-century computing technology."
"Microsoft? What the hell is 'Microsoft'?"
"Allow me to explain. We will send this program, for some reason called 'Windows', through the Borg command pathways. Once inside their root command unit, it will begin consuming system resources at an unstoppable rate."
"But the Borg have the ability to adapt. Won't they alter their processing systems to increase their storage capacity?"
"Yes, Captain. But when 'Windows' detects this, it creates a new version of itself known as an 'upgrade'. The use of resources increases exponentially with each iteration. The Borg will not be able to adapt quickly enough. Eventually all of their processing ability will be taken over and none will be available for their normal operational functions."
"Excellent work. This is even better than that 'unsolvable geometric shape' idea."
.... 15 Minutes Later .....
"Captain, we have successfully installed the 'Windows' in the command unit and as expected it immediately consumed 85% of all resources. We, however, have not received any confirmation of the expected 'upgrade'."
"Our scanners have picked up an increase in Borg storage and CPU capacity to compensate, but we still have no indication of an 'upgrade' to compensate for their increase."
"Data, scan the history banks again and determine if there is something we have missed."
"Sir, I believe there is a reason for the failure in the 'upgrade'. Apparently the Borg have circumvented that part of the plan by not sending in their registration cards."
"Captain, we have no choice. Requesting permission to begin emergency escape sequence 3F..."
"Wait, Captain K just detected their CPU capacity has suddenly dropped to 0%!"
"Data, what do your scanners show?"
"Apparently, the Borg have found the internal 'Windows' module named 'Solitaire' and it has used up all the CPU capacity."
"Let's wait and see how long this 'solitaire' can reduce their functionality."
... Two Hours Pass .....
"Geordi, what's the status on the Borg?"
"As expected, the Borg are attempting to re-engineer to compensate for increased CPU and storage demands, but each time they successfully increase resources, I have set up our closest deep space monitor beacon to transmit more 'Windows' modules from something called the 'Microsoft fun-pack'."
"How much time will that buy us?"
"Current Borg solution rates allow me to predict an interest span of 6 more hours."
"Captain, another vessel has entered our sector."
"Identify."
"It appears to have markings very similar

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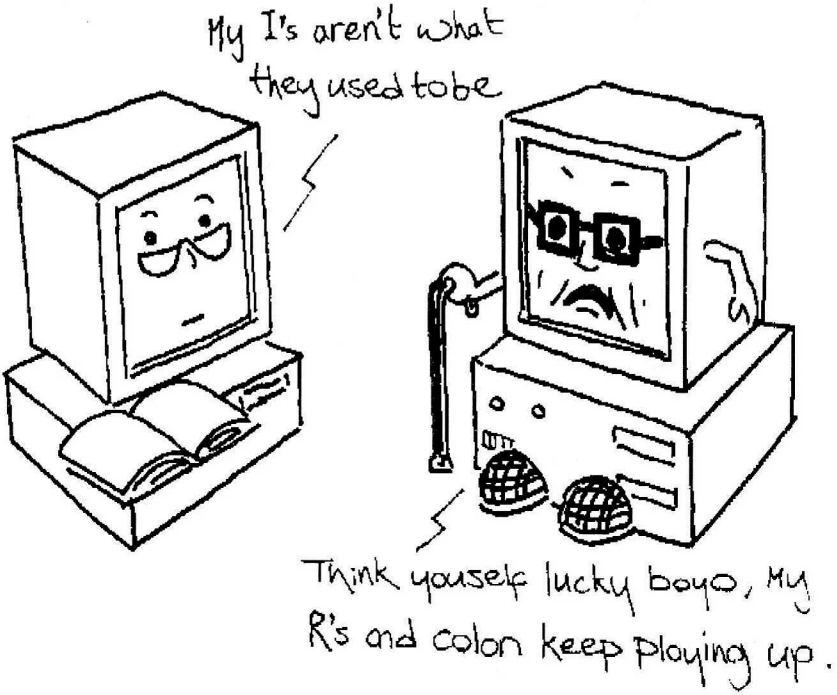
to the 'Microsoft' logo."
"THIS IS ADMIRAL BILL GATES OF THE MICROSOFT FLAGSHIP MONOPOLY. WE HAVE POSITIVE CONFIRMATION OF UNREGISTERED SOFTWARE IN THIS SECTOR. SURRENDER ALL ASSETS AND WE CAN AVOID ANY TROUBLE. YOU HAVE 10 SECONDS."
"The alien ship has just opened its forward hatches and released thousands of humanoid shaped objects."
"Magnify forward viewer on the alien craft."
"Good God, Captain! Those are humans floating straight toward the Borg ship with no life support suits! How can they survive the tortures of deep space?!"
"I don't believe that those are humans, sir. If you will look closer, I believe you'll see that they are carrying something recognized by twenty-first century man as doe-skin briefcases, and wearing Armani suits."
"Lawyers!!"
"It can't be. All the lawyers were rounded up and sent hurtling into the sun in 2017 during the Great Awakening."
"True, but apparently some must have survived."
"They have surrounded the Borg ship and are covering it with all types of papers."
"I believe that is known in ancient vernacular as 'red tape'. It often proves fatal."
"They're tearing the Borg to pieces!"
"Turn off the monitors. I can't stand it to watch; not even the Borg deserve that."



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RM AND DR SOLOMON'S IN PARTNERSHIP

Guarding networks from the virus threat

Educational establishments are becoming increasingly exposed to the threat of virus attacks. This is due to the growing use of the Internet and pupils using their own floppy disks on the network. Virus attacks can lead to permanent loss of important data and may cost in excess of £ 4,000 to repair the damage caused to a network. It is for this reason that many network managers have become increasingly concerned. Consequently, RM have entered into a partnership with Dr Solomon's to provide a fully validated anti-virus solution for RM Connect & RM NetLM networks.

Dr Solomon's Anti-virus Protection

The main components in Dr Solomon's Anti-Virus software are described below.

1. WinGuard

WinGuard is a VxD: a full, 32-bit, device driver which runs constantly in the background of Windows sessions. WinGuard uses the award-winning FindVirus scanning technology to scan all executed or copied files. If a file is virus-infected WinGuard will prevent access to it and can be configured to send an alert message to a system administrator. WinGuard is available for Windows 3.x, Windows 95 and Windows NT systems. WinGuard can even intercept the most complex polymorphic viruses, such as SMEG, MtE, One-Half and the Trident Polymorphic Engine.

2. VirusGuard

VirusGuard is the memory-resident TSR in Dr Solomon's Anti-Virus Toolkit. Virus Guard is an on-access scanner, running all the time your PC is switched on. Every file and disk accessed is checked in a split second for viruses. If a virus is found, VirusGuard will intercept it and not allow the virus to run. VirusGuard only requires 9k of memory (can be loaded high) and yet can prevent infection from thousands of viruses, without obstructing users. It works completely transparently in the background - the only time you'll know it's running is when it detects a virus.

3. FindVirus

FindVirus is an on-demand virus scanner - capable of accurately identifying and repairing even the most complex viruses. FindVirus also has the ability to scan recursively inside compressed and archived files, supporting formats commonly used on BBSes and the Internet. FindVirus even has the capability to detect new and unknown viruses via Advanced Heuristic Analysis, without a false alarm problem.

4. Virus Encyclopedia

Dr Solomon's Anti-Virus Toolkit comes complete with an on-line virus encyclopedia. This is a database giving vital information on all the viruses that the Toolkit can detect. A rapid speed search enables users to find information on the viruses they are interested in in a split second.

5. ViVerify

ViVerify is a cryptographic checksummer which enables users to detect new and

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unknown viruses via changes to executable files. ViVerify uses four different cryptographical algorithms, including CCITT CRC and DES.

6. Scheduler
The flexible scheduler enables users to set the various elements of Dr Solomon's Anti-Virus Toolkit to run at a specified time of day.

7. Magic Bullet
Dr Solomon's very own clean, write-protected, bootable disk. Users can boot from this special disk to clean up virus infections. The Magic Bullet is even compatible with FAT 32 file systems.

8. User interface
For those who would rather not work at the command line, the Toolkit also offers a menu-driven user interface with full mouse support and context-sensitive help.

Dr Solomon's Anti-Virus Software
- Over 3 million users worldwide
- Consistently ranked as the best anti-virus product available.
- Uses the award-winning FindVirus scanning technology for complete accuracy.
- Includes Generic Decryption Engine to intercept polymorphic encrypted viruses
- Scans recursively inside ZIP, LZH, ARJ, ARC, PKLite, LZExe, ICE, CryptCom, DIET and MS Compress compressed files without writing a single byte to the hard disk.
- Advanced Heuristic Analysis detects new and unknown viruses without the problem of false alarms.
- Available for DOS, Windows 3.x, Windows 95, Windows NT, OS/2, Novell Netware, Macintosh and SCO UNIX.

The Future Impact of Viruses

Making predictions about the future is dangerous. Without the aid of a crystal ball, it is unwise to try and be too specific about what is likely to happen. Nevertheless, since the seeds of the future are planted in the present, it is possible to make a broad assessment of future virus developments. With regard to the desktop operating systems being used on the PC, the future clearly lies with Microsoft Windows, whether that be Windows 95 and/or Windows NT, although it is also clear that DOS will be with us for some time to come. **To a considerable degree, the impact of viruses under Windows will define their overall impact on the PC world.**

Within this context, macro viruses will almost certainly play a considerable part. They have already had a marked effect. Since the appearance of WM.Concept, in July 1995, we have seen around two dozen macro viruses. WM.Concept alone currently accounts for around 50% of all virus reports to anti-virus vendors and researchers. And while WM.Concept causes no damage to data, we have already seen the first, albeit faltering, steps towards macro viruses which threaten data. Macro viruses, it should be noted, are not confined to Microsoft Word for Windows. In January 1996, the first macro virus to infect Lotus AmiPro files (APM.GreenStripe) appeared. And XM.Laroux, which appeared in July 1996, is the first working macro virus to infect Microsoft Excel for Windows spreadsheets.

The impact of macro viruses rests on three factors.

(1) Macro viruses are written in WordBasic. They are easier to write than traditional viruses which are typically written using low-level programming tools. As a result, virus writing is no longer the preserve of a comparatively small number of people.

(2) Macro viruses infect document files. Document files, to which macros are attached, provide viruses with a far more effective replication method than executable files. Document files are exchanged far more frequently than program files. The increased use of e-mail and the ability to attach files to e-mail, and mass access to the Internet and on-line services like CompuServe and America Online is likely to make macro viruses a much greater threat to computer users than 'traditional' file viruses.

(3) Macro viruses are not platform-specific. There are versions of Microsoft Word for Windows 3.x, Windows 95, Windows NT and Macintosh. This makes all of these operating systems susceptible to macro viruses, although anything in a macro which makes use of calls to a specific operating system, as with the WM.FormatC macro trojan, will be restricted to that particular operating system. However, macro viruses do not make up the whole picture. Boot sector viruses, which currently make up around 70% of 'in-the-wild' viruses, are not about to disappear. These viruses infect at boot-up, when an infected floppy disk is inadvertently left in drive A. They infect at a BIOS level; that is, before the operating system loads. This is true of any operating system... DOS, Windows (of whatever flavour), OS/2, Novell Netware, etc. For this reason, **any** PC is susceptible to infection from boot sector viruses. Under Windows 95, boot sector viruses can go memory-resident and successfully infect floppy disks accessed in the PC. This is not the case under protected mode operating systems, like Windows NT, where the concept of a TSR (memory-resident program) is anathema. However, data stored on PCs running these operating systems is still at risk. Any damage routine triggered by a boot sector virus, like the infection process, takes place at a BIOS level before the operating system has been loaded.

Just as the spread of boot sector viruses will be more limited under Windows NT, the spread of traditional file viruses (the most successful of which are memory-resident viruses) is likely to diminish. However, this will have less of an impact on the wider picture. It should be remembered that 'traditional' file viruses, as distinct from macro viruses, represent only about 30% of 'in the wild' viruses. It is worth remembering that the observations above relate to existing viruses, written during a period when DOS has been the principal desktop operating system. And the viruses we have seen which infect Windows programs (for example, Tentacle or Boza) are not memory-resident viruses. However, a virus which is able to actively monitor, and intercept disk or file activity, is able to spread more effectively. It is not inconceivable that at some point in the future viruses will be written to do this. It is much less straightforward to write such programs for non-DOS operating systems. However, anti-virus vendors are able to write programs to monitor disk and file activity under Windows NT. Program code is program code: if anti-virus programs can function in this way, virus programs can also be written to do so. **There is no reason to suppose that the number of viruses being written will diminish.** There are currently over 11,000 viruses (February 1997) with 250-300 new ones appearing every month. Although it is difficult to say if this rate of growth will continue, it is fair to say that reports of the death of viruses have been 'greatly exaggerated'.

(For further information on the partnership between RM and Dr Solomon's, please contact Chris Wild on 01235 826446). Prices start at around £89 for a single machine and there is an INSITE option for network coverage.

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AN APPEAL

I'm looking for some teachers who work with or have knowledge of schools or other sites where computers are used with children with special needs - any kind: disabilities, learning difficulties, social problems, etc. I'm particularly interested in UK, Denmark and Sweden where I have reason to believe there's a lot of experience.

I'm currently doing some research to identify computer applications which can be used with advantage with such children:

1. Using normal currently available hardware and software;

2. Using modified or special hardware and software.

The research includes identification of needs and possible applications in Romania, aimed at resulting in a pilot project.

If you have some info and are willing to help please send me (not to the list) a simple acknowledgement and I'll send you my questions.

Many thanks, ROGER LIVESEY

****

Giving a chance to young people in Romania

****

Roger Livesey
Director of Programmes
Fundatia Umanitara
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O Noua Echipa Romaneasca'
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****

REVIEWS OF UTILITIES

by Lewis Deacon

Programs tested on *486s running NetLM2 (W3.1) with a single server*

Introduction

NETWORK PADLOCK will stop any unwanted program from running on your network. It runs in the background, out of sight, checking the active program every couple of seconds. If the active program has not been designated as a program which can be run then it is closed. I was especially looking forward to using Network Padlock, because my students had recently discovered a way to run programs on our previously 'secure' network. For the record, it was Netscape Navigator and an HTML editor that were allowing the users to open programs.

Installation

Installation is brief. You can either select or create a directory to copy the files to, and then you need to tell it where your system directory is. During installation you can give certain users the chance to over-ride Network Padlock. You will also need to enter a numeric password for the program Adder (which lets you add 'valid' programs). After the installation program has finished you have the option to select some 'Optional Valid Programs' (standard stuff, e.g. Write, Paintbrush etc.). After it has set itself up you must manually make sure Network Padlock starts up every time a user logs on. (It might have been nice if it was more automated, but you only have to go through this procedure once).

Setup

This is the tedious part. For Network Padlock to know which programs are allowed to run, you must load every program you wish to make 'valid' whilst the program Adder is running, and tell it to add the active program to the 'Valid Programs' list (if you want to add the program that is). Programs can also be added at a later date, as well as being easily removed from the Valid Programs list (again, you use Adder to do this, but this time you tell it to remove the program from the 'Valid Programs' list). The installation program adds the basic Windows applications, and you can also add a few optional extras (e.g. Netscape, Paint Shop Pro, etc.); this makes your life a fair bit easier.

Using it, how it works, and its flaws

Network Padlock runs out of sight in the background, and apparently takes up no more than 3% of the system resources. Our network suffered from no noticeable slowdown because of Network Padlock. When a program is run Network Padlock checks it. If it does not recognise it as a 'valid' program then it is closed, the user who tried to run the program has their username, the program they tried to run, and the date and time logged. The computer also beeps five times to alert you if you are present. It is also possible to give up to five users the ability to over-ride Network Padlock. This can be done automatically during installation or manually by editing a text file.

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However, it doesn't appear to be able to stop DOS programs (apparently for Network Padlock to be able to stop a program, the program needs to have a window). I didn't find this much of a problem though, as my W31 setup can't handle anything but the most basic of DOS programs.I also consider the awkward process of adding programs a flaw, but Adder is easy to use. The program that lets you easily add the basic Windows applications and some of the most popular programs also helps.

Finally, if you have Postbox installed in the same directory as Network Padlock then it will alert you if someone has sent you mail.

Summary

Overall I felt this application was effective, and easy to use, and could save your network from any hacking attempts. It does have flaws, but these are compensated by the comparatively cheap price.

Ordering details are at the end of these reviews.

TASKAID £10 (unlimited network use-requires Network Padlock or Network Aid)

Introduction

TaskAid is an extension to Network Padlock (or Network Aid). It allows you to do such things as send messages to users at set times, make programs run on user's machines when you set them, disable Windows on user's machine (the only way to make Windows shutdown - this function isn't available with the Network Aid version), and do various logs, such as log all users logged on at a set time, log improper shutdowns (i.e. log all users who reset the machine), and logging a user's network sessions. In order to carry out these tasks, TaskAid only needs Network Padlock/Aid to be running all the time (i.e. it doesn't need any other Windows apps).

Using it, and its flaws

TaskAid can only be run by Admin. This could be a potential problem if your username isn't ADMIN (obviously), but I didn't have any troubles. (If it is a problem, The Mitchell Company will edit the valid usernames for you upon your request). You select your task from a dropdown list, and then enter some simple details (a file to log to, the time and date of the task, or the message). Messages can be sent to all users logged on at the date set, or to a specific user. You can set a program to run at a specific time for either all the users logged on, or a specific user. A useful example of this is if you were conducting a lesson and you wanted the students to run a program – instead of having them load it, you could make it run automatically at a set time, so the program appears to load on its own. You can also force all users to log off, or just one user. This is done by closing Program Manager, forcing the user to shutdown (they can't run any more programs). I thought this was a bit long-winded. So I asked Andy Mitchell why it was done this way. Apparently there is no way for an independent application to tell NetLM(2) Windows to shutdown, so a different method had to be found. The logs are very useful. If you want to see who is resetting the machine (clogging up the server) instead of shutting it down properly you can run a log that tells you which users shut down improperly, and which users shut down properly. You can also log a user's network sessions. This tells you

when a user logs on, and then when they log off again over a period of time. All tasks are added to the Task List. If you delete a task from the task list before it happens, then it will never take place, you can also stop logs this way. However, tasks couldn't be edited once they were set- you had to delete them and start again.

Summary

TaskAid is a useful add-on for Network Padlock (especially the logs), and it has a definite '*wow*' factor. It is also very cheap, and should really be considered as a part of the Network Padlock (and definitely Network Aid) package (and it could be considered free if you buy everything, because you get £10 off).

STUDENT FILE MANAGER £20 (unlimited network use)

Introduction

Student File Manager is a simplified version of File Manager for the pupils to manage the files in their directory, without being able to do any damage to the network. Rather than focusing on directory structure like File Manager, Student File Manager focuses on fast and easy access to all the files in their directory.

Using it, and its flaws

It's very easy to use, and well set out. You have a list of all the files in your directory, including the files in any sub-directories. You also have another list, that shows all the sub-directories in your directory.

Strangely, when some of my students ran Student File Manager they could only read their sub-directories two levels deep (e.g. they wouldn't be able to see files in N:\<USERNAME>.001\SD1\SD2\SD3, but they would see any files that were in the sub-directory SD2). However, other users could see all of their directories (and therefore all of their files), no matter how many sub-directories they had.

I contacted Andy Mitchell, and he said that, due to technical limitations, if your user's directories follow the pattern <drive>:\<username>.00? then you would only be able to read your sub-directories two levels deep. However if your directories follow the pattern <drive>:\<username> then you will be able to see all your sub-directories. Although this could be a serious limitation, I found little reason for concern. Hardly any of my users wanted to have lots of sub directories, and any new users I add follow the second pattern, <drive>:\<username>.

There are various buttons for managing your files, Open; Print; Rename; Copy and Delete. You cannot open a files with the extension .EXE .COM .PIF .LNK and .BAT for security reasons. For managing your directories you have four buttons, Create Directory; Rename Directory; Copy Directory and Delete Directory. All the buttons functioned correctly. However, when copying a directory, the sub-directories of the directory you are copying aren't copied- you can only copy one directory at a time.

You have two other important buttons as well. One lets you enter a filename, and it will then search through your directory and display the first file it finds that matches the filename you entered (i.e. it searches for a file). The other button lets you limit the files shown in the file list using wildcards (e.g. enter **.txt* to show only text files).

When you click on a file its size is shown in KB (presumably it goes up to MB, but I didn't have a single file that large) at the bottom of the screen.

However, I was slightly disappointed to discover that the space taken up by all the files wasn't shown. If the file is a standard text file (e.g. *.txt, *.ini, etc.) Student File Manager will display it in its *'Text File Viewer'*. You have the option to *word wrap* the text show it'll fit on the screen. In most cases this worked, but on some files (ones which had strange formatting to begin with) the results were a little weird to say the least (in these cases you could turn word wrap off). Student File Manager will also display bitmaps. However, it stretches them to fit on the screen. To see the bitmap properly you would need to 'Open' it. Even though the image is stretched, you can still decide what to do with it (e.g. open it, delete it, etc.).

Finally, as the Administrator of the network you are given the ability to control how Student File Manager is used. By editing an ini-file you can disable any of the control buttons (except 'Help' and 'Close') you want. For example, if I wanted my students to stop deleting files in their directory and stop them from creating directories then I could disable the 'Delete' button, 'Create Directory' button. I think this is an excellent feature. It means that if any of you are worried about certain buttons doing disastrous things to your network then you can disable them.

Summary

I think that Student File Manager is a very important program for a network. It allows users to effectively manage their directories, without posing any security problems. Due to the fact they can't work with files that are not contained somewhere in their home directory, and can't run applications (that could be potentially dangerous), there is no chance for them to do any harm to the network.

NETWORK POOL £20 (unlimited network use)

Introduction

Network Pool is a user-friendly, reliable, and secure variation of the old program Pool found on some early NetLM networks. In case you don't already know, it enables users to easily share files across a network. This version is also compatible with Network Padlock/Network Aid giving you extra functions (read on to find out more).

Using it

Using Network Pool is simple. The program contains five large buttons: 'Take from Pool'; 'Add to Pool'; 'Delete'; 'Refresh' and 'Close'. They are all self explanatory. 'Delete' only lets the user delete files in their directory, but Admin can also delete files in the Pool (a directory on a public drive that isn't read-only). You have two lists. One shows the contents of your directory, the other contains the contents of the Pool. Files stored in the Pool are read-only, but they loose this attribute when you copy the file into your own directory. When you take a file from the Pool you can either delete it from the pool or leave it in there for other users. However, if users were feeling malicious, they could remove files that were important from the Pool using this feature. Fortunately, by making a minor alteration to the accompanying ini-file you can disable this feature.

It is also compatible with Network Padlock and Network Aid. If you log on as Admin and Network Pool is in the same directory as Network Padlock or Network Aid then you are given an extra function: 'Distribute Files'. This lets you either set a file to be distributed at a set time to all users logged on, or have a file

distributed constantly, so if a user removes that file from their directory, then it's immediately replaced. Both functions work well, however, you can only tell a file to be distributed to *all* users (and even then, only users who are logged on). It's still a nice option to have though.

Summary

There are no flaws with Network Pool, but if your Pool directory grows too large it can slow Network Pool down. Network Pool is generally quick, easy to setup and maintain, easy to use, and an important addition to your network (if you don't already have a copy). As well as letting pupils share files, it is an effective way for teachers to pass files onto their pupils. Also, the ability to use Network Pool in conjunction with Network Padlock or Network Aid if a useful option to have. If you don't have a very simple means of swapping files between users then Network Pool is a must-have.

Finally, you could even consider it an extension to Postbox. I realised this after watching some of my students- they were sending a file to the Pool, and then telling each other it was available using Postbox. This showed how well the programs often work together, and if you like to use your imagination, you could think of it as a way for Postbox to e-mail files (okay, so maybe that's a little *too* imaginative).

CHIT-CHAT & POSTBOX £25 (unlimited network use).

Introduction

Chit-Chat has no 'useful' purpose. It's just a simple real-time chat program which our pupils found strangely amusing (I ended up having it changed so it couldn't run during my lesson times !). Postbox is definitely useful. It is a simple e-mail system for your RM network. They are packaged together, although obviously you do not need to give the pupils access to both of them if you do not wish to.

What they're like

Most of Chit-Chat's window is used to display the conversation. Below that an ordinary user has an edit box to enter their next message into, and two buttons, one to add the message to the conversation, and one to send it privately to another user. You have nickname which you can enter when you load it up. The nickname follows the template *nickname@username*. When you log on as Admin you are given extra abilities. You can chuck people off (temporary), or ban people (permanent, but it can be undone). You can change your ID, listen to private messages, change lines of text in the conversation, or reset the conversation.

Postbox has an Inbox folder and a Sent Item(s) folder. Its very easy to use, and looks good too, with a well designed layout, and images that make it nicer to look at. To send a message all you need to know is the user's username to whom you are sending the message. You also have buttons which let you delete messages, or reply to a message someone has sent you.

Postbox also has its own 'Address Book'. This lets users assign a nickname to a username, so, instead of writing out someone's username each time they can just write out the nickname. It is a useful program, but one thing annoys me. You have a list that shows you all the nicknames. When you click on a nickname it reveals the associated username. I felt it would be much better if it showed the usernames in the list, which would not only look better, but would be easier to use.

The part of Chit-chat that displays the conversation slightly flickers, a small thing,

(continued on page 24)

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but quite annoying (presumably it's the text reloading itself to display any new messages). Postbox worked brilliantly, but while we didn't have Chit-Chat installed the pupils tried to use it to talk to each other in real-time. Network Padlock/ Network Aid improved matters further, because it told users that they had a message as soon as it was sent to them. This may seem like a small function on paper, but in practice it's very useful. However, the one part of Postbox that did annoy me, although I got used to it, was when it came to writing the messages. You didn't enter your message into a large text box, instead you entered it into several single line text boxes. I recommended to Andy Mitchell that he changed this. He said he'd already tried, but the development package (which lets him create the programs) wouldn't allow him to. He did, however, say that as soon as it was possible to use just one text box he would (and that he thought that the author of the development package was already working on it). As I said, after a while I did get used this, as did my students.

Some people may find it a problem that Chit-Chat & Postbox have to be installed to a directory that is publicly accessible, but not read-only. Personally, I had no problems with this, as I just hid the directory, and the students never suspected a thing !

Finally, neither Chitchat or Postbox would allow me to enter/send well known swear words, however, it probably wouldn't stop more localised swear words. Chitchat and Postbox will also log all users who try to swear to an inifile.

Summary

Postbox is very useful, and I consider it a must-have application for any network that does not have a proper e-mail system. Chit-Chat may seem pointless, but if you don't have Chit-Chat you will find that Postbox is used to communicate in real-time, and it doesn't work efficiently. Chit-Chat also has a 'novelty' factor, it seems to appeal to the pupils a great deal.

Installation of the programs

All the programs except Network Padlock had a similar installation program. You select to either install the 32-bit (Win95/NT) or 16-bit (Win3.11 or below) version of the program (32-bit only for Network Aid), and then either select or create a directory to copy the files to. You then need to add a shortcut to the program from all the user's desktops. An accompanying text file tells you what to do if the installation program fails, but I didn't have any problems. Also, when your installing Network Pool you need select/create a directory to be Pool.

Help

Annoyingly, there is no standard WinHelp file. Instead, help often comes as a set of information boxes (which are slow, and make it harder to find information you want). However, the help is comprehensive and informal (a good thing). Also, with each installation program you get detailed instructions on setting up & using the programs (for the Administrators reference).

Insert from Andy Mitchell (Network Aid (RM Connect version of Network Padlock, but it lacks the security features)

+ MATHS BLASTER will feature in the continued reviews next issue, which are

already viewable on the The Mitchell Company's website) :

If any of these applications appeal to you then you can either e-mail or write for more information. Below, there is a recap of the prices:

Network Padlock: £30
(unlimited network use - NetLM only)

Network Aid: £15
(unlimited network use - RM Connect only)

TaskAid: £10
(unlimited network use- requires Network Padlock or Network Aid)

Student File Manager: £20
(unlimited network use)

Network Pool: £20
(unlimited network use)

Maths Blaster: £20
(unlimited network use)

Chit-Chat & Postbox: £25
(unlimited network use)

There are two packages available, one for RM Connect and one for NetLM. They include all the programs except Maths Blaster, with either Network Padlock, or Network Aid. You will receive a £10 discount, and two free programs, Alarm Clock (which works with Network Padlock/Network Aid and is rather good) and Address Book (reviews on the website).

Visit the website, or contact Andy Mitchell for more information.

For more information,
e-mail
andy.mitchell2@ukonline.co.uk or,
visit **http://web.ukonline.co.uk/andy.mitchell2/contents.htm** or
write to
The Mitchell Company,
Greystones,
Main St.,
Badsworth, Pontefract,
W.Yorks., WF9 1AJ

Please note that while the programs Mr.Deacon reviewed were the final versions, due to lack of testing the RM Connect versions are not yet available. They may be ready by time you read this but don't hesitate to write or e-mail to find out more. If any of you are interested in testing any of the programs then get in touch.

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EDUCATION AND THE INTERNET

by John Simkin

ON 20th January 1997, thousands of children all over the world read Carol Vleck's latest entry to her journal. The children discovered that for the last couple of years Carol had been busy taking blood samples from penguin chicks on Torgerson Island. Carol explained to the children that there were several reasons why she was doing this: "First of all, we suspect that some of the babies are being raised by penguins other than their real parents... Part of the reason we suspect it occasionally happens is because when the male penguin comes back to the colony in the early spring and doesn't find his previous mate, he may take a new mate. But if his old mate then comes back, he will often switch back to the old mate if she is strong enough to oust the first female... Another reason is that eggs sometimes roll around in the colonies on uneven ground and penguins can't stand to see an uncovered egg. They quickly scoop any available egg under their brood patch and then it's theirs for the rest of the season."

Carol Vleck, an environmental physiologist, went on to explain how she was using the blood to compare the DNA among all the family members to see how closely related they were. With the help of some beautiful photographs of the penguins on Torgersen Island, Vleck also told the children about the experiments she was carrying out in her attempt to discover why penguins are such strong swimmers.

During the months of January and February, children made regular visits to Carol Vleck's journals and gradually they learnt of the results of her research on the penguins on Torgersen Island. Other children preferred to read about the experiments being carried out by Bill Fraser, an ornithologist, or David Karl, an oceanographer.

These children were able to follow these day by day developments because Carol Vleck and her fellow research scientists at Palmer Station on the Antarctic Peninsula have their own website (http://quest.arc.nasa.gov/antarctica2). Funded by the US National Science Foundation (and NASA), 'Antarctica 2' is one of the many educational projects arranged by the 'Passport to Knowledge' organisation. In the past two years 'Passport to Knowledge' has taken students on "electronic field trips to the South Pole and McMurdo Station, flown them up into the stratosphere aboard an infrared observatory, given them ways to get their hands on the Hubble Space Telescope, and launched them to Mars in a project extending into 1998."

Although funded by US organisations, anybody on the Internet can join in the fun. As well as live, interactive video and a large collection on-line materials, the website also provides a 'Teacher's Guide' and suggestions on how to customise the field trip for different age groups.

The most exciting aspect of the 'Passport to Knowledge' websites is that they are interactive. 'WebChats' and 'CUSeeMe' sessions with the researchers enable the students to have direct contact with scientists

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in the field. As 'Passport to Knowledge' points out: "Science education must involve the whole student, engaging emotions and imagination as well as intellect. Teachers are more effective, students feel connected and competent, and learning is enhanced when science education is direct, experimental and hands-on."

This philosophy is shared by the US science museums that provide on-line exhibitions. The San Francisco Exploratorium (http://www.exploratorium.edu) is a museum of science, art and human perception with over 650 interactive exhibits. So far the Exploratorium has produced electronic versions of eighteen of its favourite items on show. There are other interesting sections including 'What's New in the World' and 'Science Explorer' where students can carry out their own experiments. This is a website that really makes studying science an enjoyable experience.

The Science Museum of Minnesota (http://www.sci.mus.mn.us) has several interactive areas including projects on 'Windmills', 'Worms' and 'Butterfly Migration'. Produced by the Science Learning Network and aimed at younger children, the website encourages teachers and children all over the world to participate in these projects. The philosophy of the project is clearly illustrated by the excellent 'Thinking Foundation' section. Teachers and students create 'Thinking Fountain' cards on templates provided by the museum. The main objective is to encourage questioning and inquiry. Each card highlights an interesting resource related to science. It then refers you to three other selected connections that extend the learning process.

British museums have been slow to see the educational potential of the Internet. It is rare to find a British museum that is providing free educational material. Most concentrate on listing opening times and the price of admission. The National History Museum (http://www.nhm.ac.uk) has made a move in the right direction by creating twenty-eight dinosaur files with ideas for their use at home or in the classroom. The files include information such as: meaning of name, pronunciation, where found, length, height, weight, how it walked, teeth, type of feeder, when it lived and dinosaur group.

'A History of Flight' (http://www.nsmi.ac.uk/on-line/flight) is the first of the Science Museum's on-line exhibitions. The website starts with a time-line of the 'History of Flight'. The user can use this as a base to explore both the aircraft and the people involved in the development of this industry. Thirty-one people have been chosen and they range from King Louis XIV, who witnessed the early flight of the Montgolfier balloon, to Bill Bedford, one of the first jet test pilots. There are thirty-one aircraft on display. This usually involves a picture of the aircraft, background information on its development and technical details (span, length, weight, speed, power and armament). Although it's a start, the Science Museum's website is disappointing when one compares it to sites in other countries such as the online exhibition at the US Air Force Museum at Dayton, Ohio (http://www.wpafb.af.mil/museum).

Americans have in fact created some of the best websites on Britain. The excellent 'Virtual Tour of the Tower of London' was produced by a group of enthusiasts living in

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New York (http://www.voicenet.com/~dravyk/toltour). It is an interactive project and the creators encourage users to send in photographs and information to be added to the website. There is an official tour but users can also create their own route.

The outstanding 'Castles of Wales' (http://www.castlewales.com/home.html) is the work of Jeffrey L. Thomas and a couple of castle fanatics from Oregon, Lise and Brandon Hull. This attractively designed website enables the user to find out about 170 different castles. The creators provide a detailed history of each castle. As well as text there are numerous illustrations, for example, Beaumaris has twelve photographs and a drawing of the layout of the castle. To help the student there is an excellent online glossary of castle terms.

Although the US dominates the Internet other countries have made important contributions to the world of education. One of the most exciting is the Canadian Broadcasting Corporation's 'Laboratory' (http://www.cbc4kids.ca/norm-homepage.html). This is a constantly evolving site, which gives educators the chance to try out new ideas for teaching children science. There are regular features such as 'Weird News from the World of Science', 'Cool Experiments to do at Home', 'You Asked: Your Wacky Questions' and 'The History of Invention'.

France's 'Paris Web Museum' (http://sunsite.unc.edu/louvre) is an excellent resource and well worth a visit. So also is New Zealand's 'Amazon Adventure'. This website (http://vif27.icair.iac.org.nz) enables children to follow Andrew Mercer's trip along the Amazon river in Brazil and Peru and then into the Andes to visit the lost Inca city of Machu Picchu. Mercer sends regular written reports and photographs on what he has discovered on his journey. Back in New Zealand the Telecom Education Foundation use the information sent back by Mercer to produce teaching materials for online visitors. In the United States educational publishers are major suppliers of free teaching materials on the Internet. The Grolier Corporation 'The American Presidency' (http://gi.grolier.com/presidents/preshome.html) contains detailed biographies of a large collection of presidents, first-ladies and vice-presidents. These biographies are cross-linked with a range of different articles that appear under headings such as 'Presidential Scandals' and 'Presidential Programs'. There are also linked pages to the important political parties and pressure groups in the USA. As well as the results of the American presidential elections since 1789, there is an interesting database of political cartoons. The 'Grolier Online Exhibition Hall of Presidents' contains three short documentaries about Franklin D. Roosevelt, Harry Truman and Ronald Reagan. This part of the website also enables the user to hear speeches made by fourteen of the presidents, including one made by Grover Cleveland in 1892.

British educational publishers have been slow to follow the example of their American counterparts. However, one small publisher, Spartacus Educational, (http://www.spartacus.schoolnet.co.uk) has given free access to 'The Emancipation of Women: 1860-1920', 'Investigating the Vietnam War', 'The Internet Encyclopaedia of the First World War' and 'The Internet Encyclopaedia of the Industrial Revolution'. There are plans to gradually expand the website by adding other free projects. Spartacus has also produced a guide to the best educational websites on the Internet

(£3.50: available from 139 Carden Avenue, Brighton, BN1 8NH).

Individuals rather than companies have produced some of the most impressive educational websites. One of the finest is Mike Lavorone's evolving project, 'Trenches on the Web' (http://www.worldwar1.com/index.html). New material on the war is being added all the time and this reflects the concerns and interests of the people who use the site and are willing to send in information. Mike Lavorone describes himself as a trench-keeper ("a history technician, not a historian, recording these events with the tools currently available"). Students can explore a wide variety of themes and topics. It is also possible to look at certain issues in great detail. The range and display of statistics in this website is especially impressive. For example, it is possible to display and print out the numbers of soldiers who were killed, wounded or went missing for every country involved in the war. The student is never allowed to forget the human tragedy of the conflict and heart-rending photographs appear next to the tables and graphs on the screen. The site is truly interactive with its 'WWI Discussion Forum' and the 'Trenches Guestbook'.

Another star of the Internet is Bill Arnett, a software engineer from San Jose, California. Bill Arnett (http://seds.org/billa/offerings.html) is one of the pioneering figures of the Internet and is developing standards that hopefully others will follow. Arnett's 'Nine Planets' provides an overview of the history, mythology and current scientific knowledge of each of the planets and moons in the solar system. Each page has text and images and some have sound and video. Contents include 'The Origins of the Solar System', 'Other Solar Systems', 'Spacecraft', 'Planetary Linguistics' and 'Astronomical Names'. The photographs of the planets and moons are spectacular'. There is also an excellent glossary and links with other relevant websites.

Jeremy Hylton's 'William Shakespeare' (http://the-tech.mit.edu/Shakespeare/works.html) is less visually interesting than the sites hosted by Mike Lavorone and Bill Arnett, but the content is very impressive. The site contains the electronic version of the 'Complete Works of Shakespeare'. A powerful search-engine enables the user to search all the material for selected words or phrases. There is also a collection of the most popular Shakespearean quotations and a detailed glossary. Another section deals with the most frequently asked questions by users. The discussion area is very popular, with more than 8,000 people sending contributions since January 1996. This often involves pleas for help with essay titles such as "Comic Female Monologues" and "Triumph and Tragedy in Shakespeare's Life". There is also a comprehensive list of other resources on William Shakespeare on the Internet.

One of the great advantages of a website over other forms of mass media is that it enables new events to be added as they happen. 'Volcano World' is managed by the Hawaiian Volcano Observatory (http://volcano.und.nodak.edu) .. One of the services provided is a constantly updated list of volcanic activity. Currently there is information on 47 volcanoes, including the one at Montserrat that became active on 6th August 1997. The website has an excellent section on 'Learning about Volcanoes'. There are also online teacher's guides and lesson plans available. There are also other sites that provide the latest information on

earthquakes (http://www.earthquake .org/core.html) and tornadoes (http://www.tornadoproject.com).

The 'World Factbook' website is a good example of how the Internet is at the forefront of the information revolution. The US Central Intelligence Agency (CIA) (http://www.odci.gov/cia/publications/nsolo/wfb-all.htm) has been collecting and evaluating information on foreign countries since 1947. After many years of secrecy, the CIA has agreed to make this information available to the world. Just choose a country from the menu and the CIA will give you several pages (United Kingdom has eleven) of detailed information. At the beginning you are supplied with a map and a flag. The rest of the information is listed under: 'Geography'; 'People'; 'Government'; 'Economy'; 'Transportation'; 'Communications' and 'Defence'. The section on 'Geography' includes location, co-ordinates, area, land boundaries, coastline, climate, terrain, natural resources, land use, irrigated land and environment. Constantly updated this is one of the most important educational sites on the Internet.

In the next few years the Internet will change the world of education. For a long time educators have realised that students learn best when they are totally involved in the process. Teachers have tried hard to develop forms of learning which have emphasised active participation by the students. However, the practical problem involved in this strategy has severely restricted what teachers have been able to do. The Internet will change this. The issue is not if, but when. The speed of its implementation will depend to a large extent on government policy. What is needed is for all students to be given free and easy access to the Internet. When that happens, British organisations will respond by providing free educational materials on their Websites. Then the information revolution will become a reality.

John Simkin
Spartacus Educational
www.spartacus.schoolnet.co.uk

To: uk-schools@mailbase.ac.uk
From: David Riddle,
Date: 30/1/98, 10:03 AM
Re: Re: Rugged notebook

>This kit was originally designed for use in a military environment - I suppose that if it is soldier proof if might just be student proof! Could be useful out in the field as well as case seems to be capable of being dropped in a river. Come to think of it, might be the ideal thing for general staff use as well.<

I saw a press cutting once about 12 Research Machines 480Zs that were found in Keston Ponds near Bromley about 10-15 years ago.
They were pulled out, washed down, hung out to dry.. and worked perfectly!

David Riddle
Senior Micro Officer
(Macintosh Systems)
Goldsmiths College
London
SE14 6NW

BACK WORDS

by Mike Sharples

I have seen the future, and it zooms

Jon Meyer from the Media Research Lab at New York University recently gave us a demonstration of a new computer interface called Pad, based on the video actions of zooming and panning. The way it operates is quite different to the static 'desktop' of Windows PCs. Instead of clicking to open a file, you press the zoom button and the image of a file expands smoothly, revealing greater and greater detail. But unlike a video shot, the contents of the view change as you zoom in. A library might be shown in long shot as a set of book covers. As you zoom into a particular book its cover changes to a table of contents. Zooming into a heading for a particular chapter brings up the image of a set of pages. Even in long view you can get some idea of the contents of the pages from their overall shape, particularly if the page contains an image. As you zoom in further the full text and graphics are revealed. Instead of moving a scroll bar to skip from one part of the book to another, you zoom out, pan across, and zoom in again to the new page. Zooming and panning solve the problem of how to gain a global view of a large document, and to anyone who has used a video camera it all feels remarkably natural. Not surprisingly, children like the 'video camera' interface and it provides an easy way to construct simple games and learning activities. Jon Meyer demonstrated how to design a reading activity in a few minutes, by typing in some letters of the alphabet, then zooming into the letter "a" and as it grew to a certain size, making it fade to the word "apple" and then, zooming in more, to the word plus a picture of an apple. The interface comes with a set of tools for viewing and indexing the material. One cute gadget is the 'lens'. It acts rather like the distorting vodka bottle in the Smirnoff adverts. As the lens passes over some data its appearance changes. Passing a 'histogram' lens over a table of numbers shows it as a bar chart. Moving a 'draft' lens over part of a document might reveal the annotated first draft, or for pen input the original handwriting. The effect is quite magical and it raised a gasp from an audience of hard-bitten computer scientists. The interface is still under development. In the present version it is too easy to lose a zoomed-out object, and the effect of too much zooming and panning can be vertiginous. Later versions will have landmarks for navigation, and standard layouts to give some consistency. Trying to describe Pad in words is rather like describing movies to people who have only seen still photographs. But the Media Research Lab is negotiating with "a very well known manufacturer of consumer electronics" to produce a new range of computers with the Pad interface. Soon you may all be able to trade in your desktop for a video camera.

This is reprinted (with the permission of the author) from the excellent newsletter, Computers & Writing. I will put contact details in the next issue since they are changing editors. Let me know if you would like to know more.

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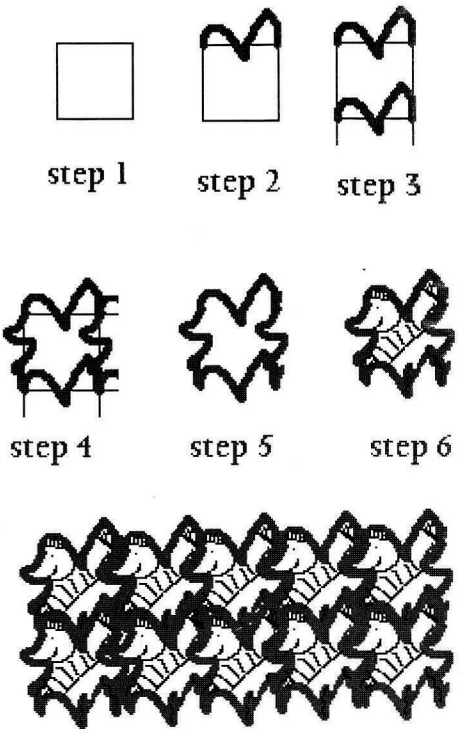
A LESSON IN TESSELLATION

by David Palmer

Topic:- Tessellation
Age-Group:- 11>14
Program:- Paintbrush or Paint
Techniques:- Cloning, 'magic' rubber, Shift-drawing (to force a square)
Curriculum:- IT and/or maths

One of the most popular lessons I do is about tessellation. We start in Paintbrush (or Paint in Windows 95) and draw a square (could be a rectangle) in a colour which we don't plan to use in the final product. A 'more interesting' line is drawn along the top using any tool as long as it begins and ends on the corners (see step 2) The selection box is used to select this new line, the control (Ctrl) key is held down and a copy dragged to the bottom of the square (step 3). A new line is drawn along one of the sides and then Ctrl-copied to the other. We now have a quite irregular shape which will tessellate. If you are using Windows 3.1 you can use the 'magic' rubber to rub out the original square without affecting your new shape. If you are using Paint, you will have to remove it more carefully. (Another example of functionality being removed by someone's usability labs!) It should then be 'decorated' and finally selected and Ctrl-copied several times to make a tiled area. It is much more effective if you can see the single tile shape away from the tiled area. We have just produced a very nice display on the wall in a very short space of time by using the output from this lesson. I am also going to offer to use the best design as wallpaper for our network computers.



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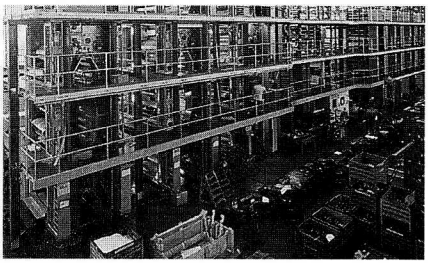
PRINTER'S PIE

by Peter Harris

COMPUTER TRENDS IN THE PRINTING INDUSTRY



BIG IS BEAUTIFUL

WHEN my brothers and I were small boys our father used to take us to visit the local waterworks to view the marvellous steam beam engine that was used to pump water for our township; so, for me, the scenes in the engine room of the TITANIC alone were worth the admission charge to see the blockbuster film. The above photograph shows a giant newspaper press under construction for use in Malaysia where it will be used to print 5.8 million newspapers every week. A newspaper at the breakfast table is a miracle that we tend to take for granted, and one that needs huge resources. However, it is obvious that all this is about to change.

The invention of printing in 1450 was one of the watersheds in human history, but to be alive now is to be living through a period that will be looked back upon as of equal importance, if not greater. The world is slowly going digital.

Encyclopedia Britannica weighs in at 137 lb.; there are 32 volumes, 55,000 articles and 23,000 illustrations; and it fills seven feet of shelving. The first edition was completed in 1771, having appeared in 100 parts starting in 1768. It is now available on CD-Rom in computer shops on the High Street for about £130. Big may be beautiful but a lot of door-to-door salesmen have lost their jobs!

WHERE ARE THEY NOW?

Cusworth Hall Museum stands on a hill alongside the A1(M) near Doncaster. Every so often they put on an exhibition linked to the past of one of the area's industries. When it was the turn of the coal mining industry one of the exhibits was a Union Handbook printed before the First World War by Faubert's, the printing company that my uncle and my father bought out.

In the teaching profession I suppose you all sometimes see a photograph or a name of someone in the papers or on television, and you say to yourself "I taught that person." Occasionally perhaps one of your pupils may go into the Graphic Arts or the Printing Industry, building on the I.T. foundations that you taught.

In 1992 creative professionals on average used four programmes; today they use eight. They also use fourteen authoring tools. Printing is Britain's sixth largest manufacturing sector, and has successfully mastered several waves of technological change and is at the leading edge of information technology. The I.T. infrastructure of even a small modern printer can be far more sophisticated in terms of data

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transfer speeds and file management than even a large bank or building society.

Writing of modern industry – did you see it in the papers that "Woad makes hi-tech return to East Anglia"? A £700,000 three-year research project to revive the development of the growing of woad (used by Queen Boadicea's warriors) has been awarded. It is hoped to produce a source of indigo ink for bubble-jet printers.

SINE QUA NON

The libretto for Stravinsky's great opera-oratorio OEDIPUS REX (based on the Greek story beloved of Sigmund Freud where a man kills his father and marries his mother) was written in French but he had it turned into Mediaeval Latin. This was for two reasons: because Latin is a dead language its meaning is frozen for all time; and also, I believe, because in the Middle Ages a knowledge of Latin was a widespread key to knowledge – this mirrors the universal psychological truth in the story.

In today's world, I.T. is slowly taking the place of Latin in former days. Education writers in the SUNDAY TIMES had this to say: "The problem with I.T. is that it has been perceived as a 'specialist' subject that only some people are good at. Well, here is the news: it is not a subject and anyone can learn how to use a satisfying and efficient tool for their work. After all, there is not a curriculum area called 'pencil and paper.' "

On a recent visit to London my wife and I spent a profitable morning at the National Gallery. The "Micro Gallery" with its touch screens enables visitors to pursue many lines of enquiry, whether of an individual painter, a school of painting or a particular subject-matter. A facility to print out is also available. This is certainly easier on the feet!

In printing and publishing, without an I.T. background there will be no future in the industry.

BIG IS BOTHERSOME

At our printshop we have problems when our customers set in a PC program using TrueType fonts and we want to output on an Apple Mac to an ECRM imagesetter. Imagine the problems with the 85 million catalogues produced annually for furniture giant Ikea which involve 37 different editions, 4,000 pages of images and 10,000 text pages.

At the moment there are two competitive file formats that are used for such jobs: Adobe's high-end PDF format and TIFF IT – and the latter was used by the five Scandinavian repro firms who designed the catalogue and the eleven printers worldwide who produced it. A system called "Twist" converts all different file formats into TIFF IT which then becomes available to all the users.

PDF stands for Portable Document Format. A PDF is a document, complete with fonts, layout, colour and other graphic elements, that can be distributed to any computer using any operating system (PC, Apple Mac or Unix) as long as the free Adobe Acrobat Reader is available. Many tutorial documents are produced in this format.

BUZZ WORDS

Phil Hammond, a GP and a lecturer in communication at Bristol University, has given

us an insight into the codes used by GPs to warn colleagues about difficult customers. TATT stands for "tired all the time"; an OAP is not a pensioner but an "over-anxious parent"; and a hypochondriac is given the TEETH treatment ("tried everything else, try homoeopathy").

The code words in the graphics industries are nearly all linked to digital output.

Adobe (which literally means "a sun-dried brick") are the firm who first made possible the technological advances in Graphics Industries because they created the Postscript page description language, which provided a universal and totally standardised way of describing and producing a printed page.

Postscript provided a simple solution for integrating text, graphics and pictures that could be produced on any output device which incorporated an Adobe Postscript Rip – for example a Postscript laserprinter or imagesetter. All the standard software packages used by the Graphics Industry such as QuarkXpress, Adobe PageMaker, Freehand or Illustrator, and Adobe Photoshop produce Postscript files when printing or exporting graphics and it is these that are interpreted by the raster image processor or Rip.

The DTP and drawing programmes on the PC such as Microsoft Publisher, Serif PagePlus and CorelDraw can produce Postscript files but because TrueType fonts are the norm on the Windows platform problems can arise.

A Rip essentially converts the vector-based artwork, which is a series of lines and curves, into a raster-based bitmap image which is then made of thousands of pixels arranged in a grid or matrix.

All Rips perform three main tasks: receiving the Postscript file, processing the bitmap data, and controlling the output device. We use a software Harlequin Rip that is loaded onto a computer using four floppy disks. This Rip costs £2,500 and because four floppy disks are so easy to copy we have to insert a "dongle" into the software circuit.

A Rip is fairly straightforward if every job is to be printed, but what is happening in today's rapidly-changing world is that because work produced by graphics designers can be used to produce printed matter, to go on a CD-Rom or even on a web site, the buzzwords in the graphics industries at the moment are linked to "digital workflow." This means that the data is stored on a server and then released to the appropriate output device.

SINCE CALLED CHAOS, A HUGE AGGLOMERATION OF UPSET

Ted Hughes's words from his reworking of Ovid aptly sum up the problems facing the printing industry.

Charles Taylor, managing director of a family printing firm in Bristol that has a £2 million turnover and employs 20 - 25 people, has written: "The next couple of years can be anticipated, but the pace of technological change is now so great that I'd be among the first to say that in ten years' time we could be engaged in activities which have not yet even been conceived of."

Heidelberg Printing Machinery Company, which is the world's largest with 30% of the market, has joined forces with Kodak to produce a digital press. The market for print-on-demand (digital presses, colour copiers and high-speed black-and-white copiers) which at the moment stands at £2.3billion is set to grow by 32% per year.

On the High Street, Kall Kwik plans to have 142 digital colour facilities, 100 black and white digital presses and around 66 large-format digital colour printers throughout the chain.

Prontaprint is planning to set up a digital colour network using ISDN.

WHY NOT START HERE?

We have recently installed an inkjet printer that has transformed the output from our computers – the Canon BJC7000 (£297 + VAT on the High Street; approximately £260 + VAT via Mail Order).

For a long time we have been wanting to produce short-run work on a photocopier or an inkjet or laser printer that was printed on a card thicker than the 160gsm board that seems to be the limit for most of them. The good news is that this Canon can print onto card up to 550gsm.

This week we had a graphics designer who wanted 50 business cards in full colour. The price for printing such a small run would have been exorbitant. On the Canon we simply produced six A4 sheets of a gloss board that had the business cards nine-up.

Y2K + EMU = TROUBLE

Even our non-computer-literate customers are aware of the Millennium Bug and the amount of money it will take to alleviate its effects; but very few people seem to be aware that the European Monetary Union will cause bigger problems for computers and their systems.

From 1 January 1999 the Euro will be adopted as the wholesale currency in at least five countries. "Ultimately the Euro will be a key currency, and although it might not be legal tender in 1999 it is increasingly likely that companies within the Euro area – and that includes companies in Britain dealing with Europe – will want to price in parallel with Europe," says Ian Taylor, Science and Technology minister in the former Conservative government.

The biggest problems will obviously be in accountancy software programmes, but it has been estimated that preparing systems to handle the EMU will land businesses with a bill three

times the size of the one they are incurring in fixing the Millennium Bug. Existing accountancy packages use a conversion table that converts local currency into a foreign currency and vice versa. With the Euro in the picture, "triangulation" (coping with conversions between three currencies at the same time) will be needed.

I have twice rung Adobe in Edinburgh to see if they had a font with the Euro symbol and eventually was advised to ring The Font Shop in London. They in turn advised me that the Euro symbol would be available as a "pie" font in two months' time. I have always had a suspicion that "arty" types don't live in the real world, and this confirmed it! All new fonts that are issued now should have the Euro symbol even if only accessed by using a combination keystroke. Graphics designers who work for the bigger businesses will no doubt be able to use a programme such as Fontographer to produce their own symbol but smaller printers do not have that luxury.

It is probable that Britain will join the second wave of European Monetary Union not the first, but the computer industry should be addressing the problems now. Keyboards will require a key with the symbol on, operating systems will have to be altered so that they can recognise the new key, and of course printers may have to be updated. School I.T. budgets will need enlarging yet again!

To their credit, Microsoft have already announced that they will update Windows 95, Windows 98 and Windows NT to cope with the new Euro symbol (but not Windows 3.1).

THE HISTORICAL BACKGROUND TO THIS ISSUE'S TYPEFACES

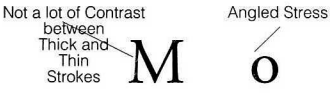
GEORGE Bernard Shaw once said: "I often quote myself–it adds spice to my conversation." As I find it necessary to repeat some of what I previously wrote about the classification of typefaces, may I apologise in advance.

I am a great admirer of the works of D. H. Lawrence (particularly the short stories) and I found that a visit to the museum at his birthplace (Eastwood, near Nottingham) was a big help in understanding the roots of his prophetic insight into the social and cultural changes that were taking place in the early part of this century. In a similar way typefaces can reflect the times in which they were created.

`Everybody uses COURIER at some time or other.` This monospaced or nonproportional typeface (this means that an `"i"` occupies the same width as a `"W"`) was originally designed about 50 years ago by Howard Kettler, who worked for IBM, for use on typewriters, which because of their construction had this restriction. It's still available for typewriters today.

The text face that we have used in this issue "Garamond" and the headings face "Britannic" also reflect their historical origins.

Claude Garamond was a prominent sixteenth-century printer who created a typeface that we classify as OLD STYLE. Old Style letters have little contrast between thick and thin strokes, bracketed serifs, and inclined axis stress. A 20th century Old Style typeface is Palatino, designed in 1950 by Hermann Zapf. The digitised version of Garamond that we have used is "Adobe Garamond" – ITC and Bitstream among others produce their own modern version of this typeface.



Euclid's "parallel postulate" (from a point outside a straight line one, and only one, coplanar straight line can be drawn which does not cut the first line) was challenged in the early nineteenth century by Lobatchewsky and Bolyai, who constructed a system of geometry in which a whole sheaf of coplanar lines can be drawn through a point outside a straight line so as not to cut the line. This so-called *hyperbolic* geometry of space is entirely self-consistent. Later that century Riemann constructed a scheme of what is often called *spherical* geometry in which all coplanar straight lines intersect. Einstein's General Theory of Relativity in fact leads us to believe that our space is Riemannian, though differing from that described by Euclid by an extraordinary small degree of curvature.

Similarly when typographers changed the postulates for producing type to maximum contrast between thick and thin strokes, and vertical stress, we ended up with something different – the so-called "Modern Style."

BRITANNIC (the typeface that we have used for the headings in this issue) is in fact a condensed "Modern" typeface without any serifs. It was designed at the Stephenson, Blake and Co. foundry in Sheffield about 1901, and it has been adopted as the typeface to be used by the National Hairdressers' Federation in their letter-headings and compliments slips etc.

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WHO NEEDS THE ORIGINAL?

THE other day, when I was listening to CLASSIC FM, a male voice choir version of Tchaikovsky's "1812 Overture" was performed. In this case, the answer is "I do!"

However, when installing Microsoft program upgrades, my 16-year-old nephew (Ashley Harris) says, "The answer seems to be no-one."

When we bought the Microsoft Office 95 upgrade we understood that our existing bought copy of Microsoft Works would qualify as the original. This was correct. When Setup checked the installed components it found Microsoft Works and went ahead with the installation of Microsoft Office 95.

When I took the Microsoft Office 95 CD-Rom home to put on my lap-top I forgot that I had not previously installed Microsoft Works. All was not lost, for when Setup reported that it could not trace any qualifying software I simply clicked on the "Browse" button and located Microsoft Office itself on the CD-Rom – and the installation proceeded without a hitch! This ***is*** pulling yourself up with your own bootstraps!

Originally we tried copying the program from the CD-Rom onto the desktop. This also seems to work, as Setup then finds the qualifying program and allows the installation to proceed, but it is not as elegant a solution.

DOCTORING THE MILLENNIUM BUG

MANY computer magazines have carried articles about the Millennium Bug, but for those who are wondering about their stand-alone machine this is the simple manual test that we adopted. There are also software programs available – using "Prove It 2000" a SUNDAY TIMES survey found that 17 out of 20 machines bought on the high street had outdated realtime clocks that will not recognise the four digits of 2000.

It is best to test in MS-DOS and not run Windows or any software program (if the program our accountant uses to audit our books is not Y2K compliant I am hoping that we shall end up not paying any tax that year!).

At the DOS prompt type DATE and enter 31/12/99. Then type TIME and enter 23.59.55. Wait until the clock should have changed and then type DATE. On both my laptop and my desktop it changed to 01/01/2000; but when I switched off and then restarted and typed DATE on the laptop it displayed 04/01/1980. This means that the laptop internal clock and BIOS did not recognise the year 2000 (like the Australian government I am one of those who believe that the next century starts on the 1st of January 2001). At the DOS prompt I then typed DATE and entered 01/01/2000; when I switched off and restarted it stayed the same.

When on both the laptop and the desktop I changed the date and time to just before midnight on 28/02/2000 and waited until they had changed to the next day, neither machine knew that the year 2000 is a leap year.

At the end of these experiments I set the date and time to the present and restarted. Neither machine seems to have suffered any harm, but perhaps you don't want to take that risk!

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SHOPTALK

by David Palmer

Listen here . .

One of the points that the inspectors made when they came to my room was that there should be some means of projecting a screen from a station so the students could see a demonstration. Ironically, I remember saying at a User Group meeting at ILECC many years ago that it would be very useful for us to have the means to do what I had seen on a Novell network where a teacher could 'overlook' any user's screen remotely and interact with it or send the output of the teacher's computer to ALL of the users' screens. At the time I was told (rather pompously I thought) that "Our market research indicates that this is not something our users require." If their market research does indicate this then I think they should get a new research team. I have NEVER met an IT teacher (or should we be getting used to ICT teacher?) who would not love such a facility and I was amused to hear at a recent roadshow that something is in the pipeline at last.

Onward and upward

I have been getting quotes for our next server upgrade. RM have a special offer for people who bought five or more stations recently that will deliver the current Connect multi-media server at a whopping 30% discount. That is the good news. The bad news is that I have had two further quotes for higher specification machines which come in at HALF of RM's sale price. I remember when we had to start paying for support we were told that from then on RM's prices were going to be competitive. Well I have to say that I am facing a very tough battle explaining to my admin that they should take the highest bid. I used to be able to justify it by saying that we got so much support - but that is now a separate item - which I can't afford! As far as the specifications are concerned, as with the screen control years ago, I am told that RM's market research does not show any interest in two areas that I think are important to our very particular needs. These are multi-processor servers and RAID hard-disks. Both of the alternate quotes I mentioned are for machines with dual Pentium II chips and 3x4G hard drives in a RAID stack. (This means that if any one of the disks should fail, you can remove it and replace it without bringing the server down). I think both of these technologies are (a) mature enough and (b) so relevant to our needs that they should be standard in an item which is going to cost more than the usual market price.

Hard Drive

I often use analogies between computers and cars ('Life in the fast lane' etc.) but I saw an even more relevant one the other day. I was walking my son to school along what should be a quiet village street. At one corner the pavement is very narrow and you feel that there is a real risk of being sucked into the road by the slipstream of the passing traffic. I noticed that the drivers are not really aware of how fast they take this corner and I realised that since our cars are now better insulated and designed for a higher basic speed, we don't get a lot of the feedback we used to get. As a result (with both cars and computers) I think we are all travelling that bit faster than we can comfortably cope with - and so get to jams (and crashes) that bit quicker.

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GOT A PROBLEM?

One of the main functions of the RM User Group is to assist members who are having problems with either hardware or software, no matter how trivial or complex that problem seems to be. Members of the committee have a wide range of experience in the use of RM equipment, including systems no longer in production, and can be contacted in the evenings or at weekends...times when you are most likely to be mulling problems over and when RM's own Customer Support lines are unavailable.

RM themselves do not claim to have extensive knowledge of products which they don't produce themselves (such as Excel or Page Plus), and although they can tell you how to install such packages on their equipment and how to get started, they cannot be expected to give you in-depth support in using them. On the other hand, the RM User Group has a membership drawn almost exclusively from teachers using these products on a daily basis and consequently have probably "been there, done that, bought the T-shirt" and most likely even "made the jigsaw" too.

So do get in touch with a member of the Committee (see elsewhere in the magazine for contact details) if you are experiencing some difficulty or other or want some advice. If we can't solve the problem ourselves then we probably know someone who can, and if even that fails we can publicise the problem in the RMUG Magazine.

GOT ANY HINTS AND TIPS? GOT ANY GOOD TEACHING IDEAS INVOLVING IT?

If so, your magazine needs you! Look...it's like this: the RMUG magazine is entirely dependent upon contributions from members to fill its pages. This means you! We know for a fact that some members shy away from contributing articles because they feel themselves not to be experts. Don't kid yourselves: if you've done an interesting lesson in your subject from an IT point of view, then you're an expert and we'd like to hear about what you did. What you write doesn't have to have high "nerd appeal"...in fact, forget the "anoraks" completely because most members are normal people like you. Honest.

The editor welcomes all manner of items from "one-liners" to classroom ideas and software reviews, so get writing and make his day (he'll even pay £5 per printed page if he likes it.....Just think: two two-page articles and you've got your annual membership fee back.....).

If (If? When, surely?) you do write an article then the best thing is to submit it to the editor as a disk file in Word for Windows or Windows Write format. He's a reasonable chap so other word processor formats are probably OK too, but it would be worth checking first in case he hasn't got a copy of Edlin Lite for Windows 95. Alternatively you can e-mail it to him or sharpen a few goose quills (but please **not** carrier pigeons: they just make too much mess).

Membership Form

Please use capitals

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I enclose a cheque payable to RMUG/order for £25. If you are not enclosing a cheque then please send an official order, indicating clearly to whom the invoice should be sent. In order to serve our members better we like to know something about them and what they do with their computers. The information you give is confidential .

Are you involved in education?

Yes ☐ No ☐

If yes, with what age range do you work:

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Do you use a computer at home?

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If you object to your details being passed on to other members of the user group, please check this box ☐

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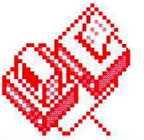

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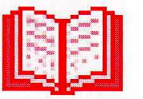

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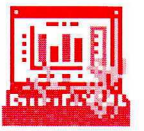

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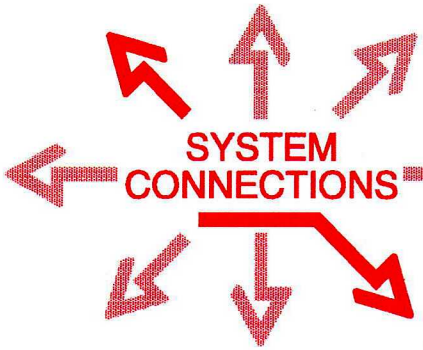

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